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NATIONAL CATALOG
OF
PRACTICES AND MEASURES
USED IN
SOIL AND WATER CONSERVATION



UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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National Catalog
of
Practices and Measures
used in
Soil and Water Conservation
(Revised)

FOREWORD

The purpose of this National Catalog of Practices and Measures used in Soil and Water Conservation, Revised July 1959, is to establish uniform names and definitions for those practices which are most commonly used in the planning and the carrying out of soil and water conservation programs.

Standards and specifications for each practice that is used locally will be prepared as a part of the technical guide for the Work Units. Each standard for a practice will set forth the objective or purpose and the conditions under which it will be used. The specifications for a practice will give the details of installation, including kinds and quality of materials to be used.

This revised catalog was developed from the suggestions made by specialists, State Office staff members, and others to the Catalog Committee. Staff experiences in using the practices defined in previous catalogs were also considered. It was prepared primarily for use by the technicians of the Soil Conservation Service; however, others who are interested in soil and water conservation programs should find the catalog useful.

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- A -

Aquatic weed control (acres) - Controlling undesirable aquatic vegetation by mechanical or chemical methods.

- B -

Bedding (Crowning) (acres) - Plowing, blading, or otherwise elevating surface of flat land into a series of broad, low ridges separated by shallow, parallel dead furrows. Ditches installed between beds in this practice will not be classed as SURFACE FIELD DITCHES.

Border dikes and levees (miles) - Constructing earth dikes and levees to planned dimensions and spacing as a part of a border, contour levee, or furrow irrigation system.

Brush control (acres) - Killing or suppressing brush or other woody plants by mechanical, chemical, biological, or other means.

- C -

Canals and laterals (miles) - Installing permanent irrigation canals or laterals from the source of supply to one or more farms. This includes open channels and elevated canals, but does not include FIELD DITCHES for irrigation.

Cattle walkways (miles) - Constructing an earth fill or embankment on marsh range or on range areas subject to overflow.

Chiseling (acres) - Breaking or shattering parent material, a hardpan, a plow pan layer below normal plow depth, or clay pans which impede internal soil drainage or restrict development of plant roots. This does not include SUBSOILING where soil disturbance is greater than 16 inches.

Clearing and snagging (miles) - Removing snags, drifts, or other obstructions within the channel.

Conservation cropping system (acres) - Growing crops in combination with needed cultural and management measures. Cropping systems include the use of rotations that contain grasses and legumes, as well as sequences in which the desired benefits are achieved without the use of such crops.

Contour farming (acres) - Conducting farming operations on sloping, cultivated land in such a way that plowing, land preparation, planting, and cultivation are done on the contour. This includes following established grades of terraces, diversions, or contour strips, and farming between trees in orchards and vineyards planted on the contour.

Contour furrowing (acres) - Plowing furrows on the contour on rangeland at intervals varying with the slope and ground cover.

Contour orchards, vineyards, or small fruits (acres) - Planting orchards, vineyards, or small fruits so that all cultural operations can be performed on the contour.

Contour stripcropping (acres) - Growing crops in a systematic arrangement of strips or bands on the contour. The crops are arranged so that a strip of grass or close-growing crop is alternated with a strip of clean-tilled crop or fallow.

Controlled burning (acres) - Using fire to improve forage production, wildlife habitat, or the production of wood products under conditions where the area to be burned is predetermined and the intensity of the fire controlled.

Cover cropping (acres) - Using close-growing grasses, legumes, or small grain in a cropping system primarily for summer or winter protection. Cover crops usually occupy the land for a period of one year or less.

Critical area planting (acres) - Stabilizing silt-producing and severely eroded areas by establishing vegetative cover. This includes woody plants, such as trees, shrubs, or vines, and adapted grasses or legumes established by seeding or sodding to provide long-term ground cover. This does not include TREE PLANTING which is mainly for the production of wood products.

Crop residue use (acres) - Utilizing plant residues left in cultivated fields by incorporating them into the soil or leaving them on the surface during that part of the year when critical erosion periods usually occur.

Cut-back borders for wildlife (rods) - Converting strips of trees at the edges of woodlands to herbaceous vegetation or shrubs.

- D -

Debris basin (number) - Constructing a barrier or dam across a waterway or at other suitable locations to form a silt or sediment basin. This includes silt basins, but does not include sediment pools which are part of a FLOODWATER RETARDING STRUCTURE.

Deferred grazing (acres) - Periodically postponing or deferring grazing on rangeland for a prescribed period during any growth period of the year.

Desilting area establishment (acres) - Planting an area to grass, shrubs, or other vegetation, or fencing such an area to protect the native vegetation.

Dikes and levees (miles and cubic yards) - Constructing an embankment of earth or other suitable material along the banks of a stream, lake, or tidal area.

Ditch and canal lining (linear feet) - Installing fixed linings of impervious materials in existing or newly constructed field irrigation ditches and canals. This includes shaping or reshaping of ditches and using materials such as concrete, asphalt, metal, or other durable linings.

Ditch bank seeding (rods) - Seeding perennial grasses and legumes on the bank, berm, and part of the spoilbank along ditches.

Diversions (miles) - Grading or digging a channel, with a supporting ridge on the lower side, across the slope.

Drainage pumping plants (number) - Installing pumping facilities for removing excess surface or ground water from lowlands which cannot be drained by gravity. This includes installation of pumps, motors or engines, and auxiliary equipment; suction and discharge pipes; and buildings where required. This does not include PUMPED WELL DRAINS.

Dune stabilization (acres) - Controlling surface movement of sand dunes or shifting sand by vegetative or mechanical means.

- E -

Emergency tillage (acres) - Roughening the soil surface by such methods as listing, ridging, duck-footing, chiseling, or other means. This practice is considered only as an emergency conservation measure and does not provide long-term benefits.

- F -

Farm ponds (number) - Impounding water by constructing a dam across a watercourse or a natural basin, or by excavating a pit or "dugout." Such ponds do not include SPRING DEVELOPMENT or IRRIGATION RESERVOIRS.

Farmstead and feedlot windbreaks (acres) - Planting narrow belts of trees or shrubs.

Fencing (rods) - Constructing a mechanical barrier to control livestock. This does not include HEDGEROW PLANTING.

Fertilizing (acres) - Adding natural or manufactured plant nutrient-containing materials, usually inorganic, other than lime or gypsum to the soil.

Field border planting (rods) - Establishing borders or strips of perennial vegetation at field edges. This does not include FARMSTEAD AND FEEDLOT WINDBREAKS, FIELD WINDBREAKS, or CUT-BACK BORDERS.

Field ditches (miles) - Installing permanent irrigation ditches leading from the source of supply to a field or fields within the farm distribution system. This includes open channels and elevated ditches. This does not include CANALS AND LATERALS which deliver water to the farm.

Field stripcropping (acres) - Growing crops in a systematic arrangement of strips or bands across the general slope, but not on the contour, so that a strip of grass or close-growing crop is alternated with a clean-tilled crop or fallow. This does not include CONTOUR STRIPCROPPING.

Field windbreaks (miles) - Planting suitable trees or shrubs in strips or belts.

Firebreaks (linear feet) - Installing barriers designed to check or stop uncontrolled fires on woodland or rangeland.

Fishpond fertilization (number) - Adding fertilizer to impounded water.

Fishpond stocking (number) - Stocking impounded waters with fish, bait fish, food fish, crayfish, and other aquatic animals.

Floodwater diversion (miles) - Excavating a graded channel with a supporting embankment or dike on the lower side on lowlands subject to flood damages. This does not include FLOODWAY CONSTRUCTION.

Floodwater retarding structure (number and acre feet of temporary storage) - Constructing a detention dam, with a fixed drawdown tube and a spillway, across a stream or natural watercourse.

Floodway construction (miles) - Excavating a channel across a floodplain or along the overflow area of streams and rivers. Floodways may be bounded by dikes or levees.

- G -

Grade stabilization structure (number) - Installing a grade stabilizing structure or structures in watercourses. Such structures may include drop inlets, chutes, drops, and others. Usually these structures require special design, and they may include floodwater detention capacity. This does not include STREAM CHANNEL IMPROVEMENT or STREAMBANK PROTECTION.

Gradient terraces (miles) - Constructing an earth embankment or a series of ridges and channels across the slope at suitable spacings and with accepted grades.

Grassed waterway (acres) - Reshaping or grading and establishing suitable vegetation on natural waterways or depressions.

- H -

Hayland planting (acres) - Establishing long-term hay stands of grasses or legumes. Such plantings do not include GRASSED WATERWAYS on cropland.

Hedgerow planting (rods) - Establishing a living fence or hedgerow of shrubs or trees within, across, or around fields. This does not include FARMSTEAD AND FEEDLOT WINDBREAK and FIELD WINDBREAK plantings.

- I -

Improved water application (acres) - Applying irrigation water under a planned farm irrigation system before all structural or operational improvements have been made but where definite action has been taken to improve irrigation efficiencies and to reduce erosion.

Irrigation pipelines (linear feet) - Installing pipe and other conduits in supply and distribution systems, including tile and perforated pipe used for subsurface irrigation. This includes permanently installed pipeline for SPRINKLER IRRIGATION SYSTEMS and larger conduits used to convey irrigation water. This does not include FIELD DITCHES, CANALS AND LATERALS, or portable pipelines used with sprinkler systems, and other pipe installations for livestock water.

Irrigation pumping plants (number) - Installing irrigation pumping facilities in wells, ponds, or streams, and other sources.

Irrigation reservoirs (number and designed acre feet) - Constructing a dam for impounding water for irrigation. This does not include REGULATING RESERVOIRS AND IRRIGATION PITS. Such reservoirs do not include multiple-purpose ponds constructed mainly for control of runoff water.

- L -

Land clearing (acres) - Removing trees, stumps, and other vegetation from wooded areas. This does not include BRUSH CONTROL or OBSTRUCTION REMOVAL.

Land grading (acres) - Reshaping the ground surface by grading to planned grades. This practice requires a detailed engineering survey and layout. This is in contrast with LAND SMOOTHING where detailed engineering survey and layout are not performed. This does not include LAND LEVELING for irrigation.

Land leveling (acres) - Reshaping the land surface to a planned grade. This does not include LAND GRADING for drainage or LAND SMOOTHING.

Land smoothing (acres) - Removing minor irregularities on the land surface without altering the general topographic pattern. This is usually done with special equipment and does not require a detailed engineering survey. This does not include the "floating" done as a regular maintenance practice on irrigated land or the "planing" done as the final step in a LAND LEVELING or LAND GRADING job.

Level ditching (rods) - Constructing ungraded ditches on lands having a high water table. This does not include SURFACE FIELD DITCHES, FIELD DITCHES, or MAINS AND LATERALS.

Level terraces (miles) - Constructing an earth embankment or series of ridges and channels across the slope at suitable spacings with no grades.

Liming (acres) - Applying lime to the land.

Livestock exclusion (acres) - Excluding livestock from woodlands.

- M -

Mains and laterals (miles) - Installing and excavating open drainage ditches designed to grade. This does not include SURFACE FIELD DITCHES.

Mole drains (miles) - Pulling a bullet-shaped cylinder through the soil and forming an underground conduit.

Mulching (acres) - Applying plant or other suitable materials, not produced on the site, to the surface of the soil.

- N -

Natural woodland seeding (acres) - Treating open areas or understocked woodland areas to encourage natural seeding of desirable trees.

- O -

Obstruction removal (acres) - Removing rock, stone fences, hedges, or fence rows and filling gullies or abandoned roads through crop or grassland fields. This does not include BRUSH CONTROL on grassland or LAND CLEARING performed to convert wooded areas to other uses.

Open ditch structures (number) - Installing control structures in open ditches. This includes structures built in drainage ditches and irrigation ditches and canals, and structures in other artificial channels. Examples of such structures are culverts, bridges, drainage outlets, chutes, flumes, and turnouts.

Outlet construction (linear feet) - Constructing designed channels for the disposal of runoff water from diversions or terraces and other structures, including alteration of watercourses.

- P -

Parallel terraces (miles) - Constructing an earth embankment or series of ridges and channels in parallel across the slope at suitable spacing and with accepted grades.

Pasture mowing (acres) - Clipping pastures to reduce competition of undesirable plants and to encourage uniform growth of desirable species.

Pasture planting (acres) - Establishing adapted species of perennial, biennial, or reseeding forage plants on new pasture lands converted from other uses.

Pasture renovation (acres) - Improving permanent pastures by disking or other mechanical methods.

Pipelines for livestock water (linear feet) - Constructing pipelines for the distribution of stockwater.

Pitting (acres) - Making shallow pits or basins of suitable capacity and distribution on rangeland to retain water from rainfall and snowmelt. This practice does not include CONTOUR FURROWING.

Plow planting (acres) - Planting a crop at the time the land is plowed, or soon after, without additional tillage operations to prepare a seedbed.

Pond area planting (acres) - Establishing perennial vegetation (useful to wildlife) adjacent to dugouts, ponds, pits, irrigation reservoirs, and floodwater retarding structures.

Proper irrigation water use (acres) - Efficiently applying irrigation water, in accordance with the needs of the crop and the characteristics of the soil and topography, under a planned farm irrigation system where all necessary water control structures have been installed and all necessary operational improvements have been made.

Proper pasture use (acres) - Grazing pastures at a rate that will maintain grasses and legumes of high quality by adjusting the stocking rates or season of use to favor maximum growth and survival.

Proper range use (acres) - Grazing rangelands at an intensity which will maintain adequate cover for soil protection and maintain or improve the quantity and the quality of desirable vegetation.

Proper woodland grazing (acres) - Grazing, where woodland is a planned use, at an intensity which will maintain adequate cover for soil protection and maintain or improve the quantity and quality of trees and forage vegetation.

Pumped well drain (number) - Sinking a well into an aquifer from which water is pumped to lower the prevailing water table. This is in contrast with VERTICAL DRAINS.

- R -

Range seeding (acres) - Establishing adapted grasses, primarily natives or legumes, by seeding on rangelands. This does not include PASTURE PLANTING.

Regulating reservoirs and irrigation pits (number and acre feet) - Constructing small storage reservoirs to regulate the stream of water available to the irrigator. This is sometimes referred to as an "overnight" storage reservoir. This also includes open pits excavated below the ground surface to intercept and store either surface water or ground water for irrigation purposes.

Regulating water in drainage systems (acres) - Controlling the removal of surface or subsurface runoff primarily through the operation of water control structures.

Rotation-deferred grazing (acres) - Grazing under a system where one or more range units are rested at planned intervals throughout the growing season of key plants, and generally no unit is grazed more than half of any growing season or at the same time in successive years.

Rotation grazing (acres) - Grazing forage plants on well managed pastures in such a manner as to allow for a definite recovery period following each grazing period. This includes alternate use of two or more pastures at regular intervals or the use of temporary fences within pastures to prevent overgrazing.

- S -

Salting (acres) - Placing salt on the range in such a manner as to improve distribution of grazing.

Spoilbank spreading (cubic yards) - Disposing of excavated materials from a drainage ditch or irrigation canal by spreading the surplus over adjacent land. This includes the filling of low places, the forming of a berm or ridge along the channel, and the shaping of the banks.

Spring development (number) - Improving springs and seeps by excavating, cleaning, capping, or providing collection and storage facilities. This does not include TROUGHS AND TANKS and PIPELINES FOR LIVESTOCK WATER.

Sprinkler irrigation system (number) - Providing for the application of irrigation water by means of perforated pipes or nozzles operated under pressure. This includes pipe or spray nozzles required to operate the system, as well as other pressure systems operated temporarily for crop or forage production.

Streambank planting (rods) - Establishing perennial vegetation of wildlife value on streambanks.

Streambank protection (miles) - Improving the hydraulic characteristics of streams or excavated channels.

Stream channel improvement (miles) - Improving the discharge capacity of a natural stream by excavating or enlarging to increase the channel capacity. This includes stream channel work performed as part of watershed work plans or group enterprise plans, but does not include MAINS AND LATERALS for drainage or CANALS AND LATERALS for irrigation.

Stream channel stabilization (miles) - Stabilizing the channel of a stream with suitable structures.

Stubble mulching (acres) - Managing plant residues on a year-around basis in which harvesting, tilling, planting, and cultivating operations are performed in such a way to keep protective amounts of vegetative material on the surface of the soil until the time of seeding the next crop. This does not include CROP RESIDUE USE.

Subsoiling (acres) - Loosening the soil below the depth of normal tillage without inversion and with minimum mixing of the soil. This does not include CHISELING where depth of soil disturbance is less than 16 inches.

Surface field ditches (miles) - Installing shallow graded, collection drainage ditches, usually having flat side slopes for ease of crossing, which collect water within a field. This does not include MAINS AND LATERALS, GRASSED WATERWAYS, or OUTLET CONSTRUCTION.

- T -

Tile drains (miles) - Installing drains, such as tile, pipe, or other covered drains, of suitable sizes beneath the surface on a planned grade.

Tile system structures (number) - Installing auxiliary structures for existing or new subsurface drainage systems. Principal structures include junction boxes, inlets, observation wells, pipe drops, headwalls, and relief walls.

Toxic salt reduction (acres) - Reducing or redistributing the harmful concentrations of salt in the soil.

Tree planting (acres) - Planting tree seedlings or cuttings in open areas to establish a stand of forest trees.

Troughs and tanks (number) - Installing troughs or tanks to provide drinking water for livestock. This includes needed water control devices and waste water disposal.

- V -

Vertical drains (number) - Installing a well, pipe, pit, or bore drilled into porous, underlying strata into which drainage water can be discharged. This is also called a drainage well.

- W -

Waterspreading (acres) - Diverting runoff from natural channels or gullies by means of a system of dams, dikes, or ditches and spreading it over relatively flat areas of range or haylands.

Wells (number) - Constructing or improving wells for irrigation or stockwater. This does not include TROUGHS AND TANKS for watering livestock.

Wetland development for wildlife (acres) - Diking, ditching, or flooding to create or improve a regulated wetland habitat.

Wildlife food planting (acres) - Establishing perennial, biennial, or annual plants in fields, blocks, or strips. This does not include POND AREA PLANTING or FIELD BORDER PLANTING.

Wildlife watering facility (number) - Constructing or improving water facilities for wildlife. This does not include FARM PONDS, SPRING DEVELOPMENT, WELLS, or TANKS AND TROUGHS.

Wind stripcropping (acres) - Growing erosion resisting crops in strips alternating with strips of row crop or fallow, usually arranged at angles to offset the effects of the prevailing winds.

Woodland direct seeding (acres) - Spreading tree seed by hand or by mechanical means in open areas or understocked woodlands to establish an adequate stand.

Woodland harvest cutting (acres) - Removing mature crop trees in a manner that will encourage regeneration and normal development of a new stand.

Woodland intermediate cutting (acres) - Removing merchantable trees from an immature stand.

Woodland interplanting (acres) - Planting tree seedlings in sparsely or inadequately stocked stands.

Woodland pruning (acres) - Removing live or dead branches from trees to improve the quality of the wood crop.

Woodland thinning (acres) - Removing trees of low or no commercial value from an immature woodland or from overstocked stands.

Woodland underplanting (acres) - Planting tree seedlings beneath existing forest trees of less desirable species to improve stand composition.

Woodland weeding (acres) - Removing weeds, vines, shrubs, or trees of poor form or less desirable or inferior species, which are restricting the growth of desirable trees.

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